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The Environmental Crisis and Its Root Cause

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Abstract

This paper attempts to identify the root cause of the current environment crisis. Although there have been strong debates between scholars about what has caused this environmental crisis, there is a strong agreement that the causes of the environmental crisis are mainly anthropogenic rather than natural. There are certainly a number of important factors, added together, that have contributed to the present day massive environmental crisis. However, all these different factors that have led to the environmental crisis ultimately initiated by modernity. Thus, the root cause of the current environmental crisis is modernity. This is to mean that the present-day large-scale environmental crisis is increasingly connected with modernity in such a fundamental and strong manner that it cannot be studied in isolation from it; modernity with its specific attributes such as its capitalistic or industrial character as well as the complex, highly administered technological system of modern society is held responsible for the present worldwide environmental crisis.

Key-Words : Causes of Environmental Crisis; Environmental Crisis; Modernity as Cause of Environmental Crisis; Capitalism.

I. Introduction

It is better to start from the definition of the term environment. By the environment, it is to mean our surrounding which incorporates both biotic and abiotic factors. These biotic and abiotic factors, in turn, give rise to four important zones of the environment: the atmosphere, hydrosphere, lithosphere and biosphere. There is a constant interaction among these four components of the environment. It is vital to note that it is the combinations of these four components that establish the environment. Thus, by the environmental crisis, it is to mean the crisis of atmosphere, hydrosphere, lithosphere and biosphere as a whole. The world is, now, facing an unprecedented environmental crisis. Currently, the environmental problems have become quite complex, and, indeed, it cannot be subsumed under one category. As a result, there are several manifestations of the environmental crisis. Some of these aspects of the environmental crisis are climate change; ocean acidification; stratospheric ozone destruction and depletion; deforestation; lack of global freshwater use; air pollution; soil degradation; and biodiversity loss. All of these features of the environmental crisis are included under one of the four zones of the environment mentioned above.

Having discussed the definition of term environment and highlighted the environmental crisis along with its major manifestations, the next question is, what has led to this environmental

crisis? In fact, it is extremely difficult to find real and lasting solutions to this large-scale environmental crisis until we are able to properly answer these questions. Thus, in this paper an attempt will be made to identify the root cause of the current environment crisis.

II. The Cause of the Environmental crisis

Certainly, there have been strong debates among scholars about what has caused the current environmental crisis. However, there is a strong consensus that the causes of the environmental crisis are not chiefly natural; they are rather the products of activities of humankind.

There are certainly a number of important factors, added together, that have contributed to the present massive environmental crisis. But, all these factors that have led to the environmental crisis ultimately initiated by modernity. Thus, the root cause of the current environmental crisis is modernity. The following discussion will clearly show how modernity is the root cause of the present global environmental crisis.

One of the main immediate causes of the environmental crisis is world population. Population growth has been very slow for most history of humankind. Until 1804, world population was below one billion and it is in 1804 that world population for the first time became one billion. From 1804 onward, however, world population has grown very quickly. The following survey can justify that human population has been growing very fast after 1804. The total human population was 1 billion in 1804; 3 billion in 1960; 5 billion in 1987; 6 billion in 1999 (UN, 1999); currently (in 2018) it exceeds 7.6 billion (Current World Population, 2018); and in 2050 it is estimated to be over 9 billion (UN, 2007). It is obvious that large numbers of human populations inevitably put greater interests on the environment for many purposes such as waste assimilation, habitat, resources etc. Thus, the current large-scale environmental crisis is partly caused by the increasingly growing world population. But, what it has to be made clear is that, why world population has rapidly increased after 1804? Answering this question will help us to prove that modernity is the root cause of the present-day environmental crisis.

Population growth is a result of *modernity's* activities. Most activities of elements that make up modernity contributed for the growth of world population. One of the activities of modernity that contributed for the growth of world population is explained along with the rise of the Industrial Revolution. It should be noted that the Industrial Revolution is one of the key characteristics of modernity. During the Industrial Revolution many factors which themselves resulted from the Industrial Revolution led to a great success of decreasing death rates. Some of these factors which resulted from the Industrial Revolution are the increment of food production and distribution, the improvement of public health, the improvement of medical technology, and the rise of education and the improvement of standards of living along with these factors within many developing nations. Unless these attributes did not appear in several parts of the world, especially children, all over the world, would not resist some common diseases like measles or the flu. Thus, the rise of these things along with industrialization helped humankind to fight and cure some deadly germs which were killing people and unable to be cured before. Moreover, because of the rise and improvement of modern technology, people could produce more and diverse types of food. Eventually, after long time, these discoveries and inventions have been distributed all over the world. This situation, in turn, has played a great role in dropping death rates and enhancing the standards of life for most of the people in the world.

In addition to population, by far the largest and most of the critical environmental problems we have today are either directly caused or worsened by the activities of our economic system as it has advanced in the last 3 or 4 centuries. This has been the period of the emergence

of modernity in the form of industrial capitalism. Currently, the economic system that dominates nearly all parts of the globe is capitalism, which is one of the main dimensions of modernity.

Capitalism has led to environmental crisis in many ways. One way that contributes to environmental crisis is by destructing the public attention. That is, though the environmental crisis has attracted the general public attention, capitalism is trying to destruct this public attention. One way it destructs the public attention is by guaranteeing that technology can be used as a solution to any environmental threats without a major transformation of the present economic system. Yet, the development of energy production technologies provides one of the best examples of how technologies developed by industrial capitalism to fix energy problems and then to solve environmental crisis creates new problems and aggravates the existing massive environmental crisis by replacing one environmental crisis by another crisis rather than solving it. The next section will show how technological fix of energy problem has aggravated environmental crisis instead of solving it.

Biomass, as stated by Clark and York (2008), especially wood, has, obviously, been one of the major energy sources humankind have relied upon since their existence on Earth. The rise of more energy intensive activities, for instance, the melting of metals, was, in this way, associated with more pressure on forests, since woods were fed to the fire. When the Industrial Revolution started to develop in Europe, most parts of Europe had been deforested. Especially in regions near to main sites of production, forests were severely destructed, and this deforestation was primarily caused by the demand for fuel.

As industrialization developed, capitalists were searching for new sources of power to fuel machines which were crucial for producing commodities on large scale. All forests could be consumed at an extraordinary rate and that could aggravate the scarcity of wood. Capitalists decided to bring new energy source that can substitute wood and let them accumulate large amount of money. Thus, coal was quickly introduced as the major energy source of industry. This brought a temporary solution to the fuelwood crisis even though forests continued to be cut down because of many other reasons (Clark & York, 2008). But, the introduction of coal as energy sources of industry laid down the foundations for the present worldwide environmental crisis by increasing the amount of carbon dioxide released to the atmosphere.

Oil was immediately added to coal as a source of energy and many other energy sources were used with oil. Hydropower was one of those energy sources exploited along with oil (Clark & York, 2008). Since the generation of hydropower needs damming rivers, it threatens aquatic ecosystems. The other sources of energy introduced along with hydropower is nuclear power. It was, in fact, the most controversial addition to the power mix. Initially, nuclear power was expected to provide clean, unlimited power which is also very cheap to meter. However, it proved to be too expensive and too risky source of energy. In addition, since it generates long-lived radioactive waste, it was almost impossible to develop safe long-term storage place for it. Thus, the situation was similar to the situations of the early times of the Industrial Revolution.

Moreover, technology is used by capitalism to destruct the natural environment in other ways. Capitalism perpetually supports specific types of technologies which are able to bring economic development and then maximize profits. As a matter of fact, capitalism has been known, in history, in supporting those types technologies which are very dangerous to the natural environment; since the goal of capitalist corporation is only profit maximization, they systematically establish technologies which depends on fossil fuel, nuclear energy, toxic synthetic chemicals, large dams, etc. that produce huge amounts of wastes as far as the costs can be externalized on the natural environment rather than on corporations themselves.

This inclination to select technologies that are capable of maximizing the total throughput of energy and resources for the sake of any possible higher total economic production was observed in the capitalists' industry. The Industrial Revolution was followed by the activity of converting inanimate energy for fulfilling this capitalists' interest. From the sixteenth century onward, as discussed before, there was a great shortage of firewood. To solve this problem, capitalists focused on coal and the demands of coal grew very quickly. At the beginning of nineteenth century, as stated by Foster (1999), world coal production was about 15 million tons per year. At the mid of nineteenth century, it grew approximately to 132 million tons per year and at the beginning of twentieth century it grew to 701 million; at the global level, the production of coal showed a 46-fold growth just in a century.

In the last third of the 19th century, natural gas and oil started to be exploited, huge hydroelectric projects were made, and electrical generators were invented. The consumption of petroleum rose very quickly all over the globe; that is, in 1890, it was 10 million tons; in 1920, immediately after the coming of the first automobile, it grew to 95 million tons; in 1940, it rose to 294 million tons; and in 1970s, it grew to 2.5 billion tons per year. Consequently, industrialization was related to the high usage of nonrenewable fossil fuels such as coal, petroleum and natural gas. In fact, these nonrenewable fossil fuels were supplemented by hydroelectric and later by nuclear power (Foster, 1999). Unfortunately, all of these resources which came along with industrialization are identified as the main causes of the environmental crisis that is facing the planet of Earth today.

Indeed, at present, in the 21st century, worldwide environmental crisis has been recognized as a serious problem particularly by elites. However, the solutions proposed by them are to shift the problem from a certain form of energy to another new form of energy, as discussed above. Nuclear power, although its acceptance decreased at the end of the twentieth century because of expensiveness and increasing public opposition, is currently back on the agenda, with new guarantees of how the new nuclear plants are more secure—"never mind the issue of radioactive waste". There are also some persons who advocate agrofuel as source of energy. But, this will take us back to pre-coal energy crisis. Some recent scientific studies show that growing crops for agrofuel to fuel cars could really increase the amount carbon released to the atmosphere. Another problem that arise along this production of agrofuel is that since its production is founded on unsustainable agrarian practices that needs huge contributions of fertilizers, it might just aggravate the existing soil degradation by destroying soil nutrients.

Thus, technological optimism diverts us from the real cause of the environmental problems (political- economic sources) than solving them. In this case, in addition to the above discussions, the two recent instances of technical approaches for alleviating climate change are especially important. The first approach is forwarded by Paul Crutzen who is Nobel laureate and a prominent figure in recognizing and analyzing the human -generated stratospheric ozone depletion. He recently argued that it is possible to mitigate climate change by injecting sulfur particles into the stratosphere for the purpose of increasing the albedo of the Earth, and in this manner reflect a greater amount of the radiations coming from the sun back into the space. This, in turn, can counter the warming coming from rising concentrations of GHG. In fact, this technical approach is given sincerely and out of the desperation that those in power fails to effectively solve the climate crisis that are happening at an alarming rate. However, the technical framing of the issue of climate change in this way opens the door for political and business leaders to easily reject addressing GHG emissions by arguing that technical fixes make it

unnecessary to attempt to protect forests and decrease the burning of fossil fuels. Moreover, managing the atmosphere in this way is expected to bring several bad consequences. Acid rain is one of the most obvious consequence of injecting sulfur particles into the atmosphere. There are also many consequences that have never been anticipated.

The second technical approach is given by Freeman Dyson who is very famous physicist. Recently, he argues that it is quite possible to mitigate the current worldwide climate change by substituting 25 percent of the world's forests by genetically engineered trees that are capable of eating carbons. Indeed, the environmental consequence of this kind of activity could almost certainly be extraordinary.

In forwarding the solution, both of the above scholars avoid addressing the dynamics of an economic system which is mainly arranged by the burning of fossil fuels, which continuously renew itself on a greater scale, and which destroys nature. Most of the time, techno solutions are proposed in ways which recommends that they are totally removed as they operate. The irony of this kind of poorly perceived techno-solutions is that they only serve as a tool to support those forces that cause environmental crisis, enabling those forces to keep on working so that they continue to create more environmental crisis. This helps us to recognize that the recent technological transformations have been a part of the problem rather than part of the solution and to disprove the arguments of some critics that technology is entirely a part of the solution and rather than a part of the problem.

In addition to population and industrial capitalism, urbanization is also identified as the other fundamental cause of the present worldwide environmental crisis. We have to note that urbanization is one of the main dimensions or characteristics of modernity. In fact, industrial capitalism contributed for the emergence of urbanization. Prior to 1800s, it was only 2.5 percent of world population that lives in urban areas. So, it is convincing to say that prior to 1800s, the world was almost rural. The Netherlands was first country that has a level of urbanization more than ten percent, from the early 16th century on ward. Next to the Netherlands, the other country that had areas of urbanization more than 10%, starting from the early 16th century, was Britain. In 1800, London was Europe's biggest city by having above 850,000 people. In 1985, 43% of Earth's population was living in cities. In fact, most of the urban areas were located in North America and Europe. To see the level of urbanization, in North America 64% of the population was urbanized; in Europe (without USSR), 55% of the population was living in cities; in Latin America, 41% of the population was living in urban areas; in East Asia, 17% of the population was urbanized; in South Asia, 16% of the population was living in urban areas; and in Africa, only 15% of population was living in cities (Foster, 1999). Thus, industrial revolution, capitalism, and urbanization are highly related. Specifically, urbanization was risen along with capitalism and industrialism.

The expansion of urbanization can affect the environmental at local, regional, and global levels. At local level, the natural landscape (topography) is changed and substituted by an artificial environment like brick, glass, concrete, metal, etc. below, on, and above the ground. At regional level, an unnatural or artificial heat is created. Cities more than 250,000 can be heat islands; it is warmer than the surrounding rural areas (a city of ten million might have an average annual minimum temperature close to four-degree Fahrenheit more than its surrounding rural area). At global level, these urban areas can cause many atmospheric problems, like the emission of sulfur and the emission of large amount of carbon dioxide (CO₂) (Berry, 1990). Carbon dioxide is one of the fundamental, as discussed before, causes of climate change or

global warming. So, this implies that urbanization, indirectly, is one of the causes of global warming and other types of environmental crisis.

"The greater the division of an economy into urban and rural areas, the greater the spatial concentration of population and industry, leading to concentrated—and therefore more harmful—forms of pollution" (Foster, 1999, p. 21). The most severe impacts of pollution are particularly seen in third world cities. The level of air pollution is higher in cities located in the third world countries than cities found in most of the developed capitalist world. For instance, cities like Bangkok, São Paulo, Bombay, Mexico City, Buenos Aires, Calcutta, Manila, Rio de Janeiro, Seoul, Cairo, and Tehran are highly polluted cities as compared to cities located in advanced countries.

Industry-led urban growth is always followed by the expansion of reductionist agriculture in countryside, where the energy and capital-intensive employment of hybrid seeds, chemical fertilizers, pesticides, and farm machinery produces large quantity cash crops mainly for abroad market or export. Although this brings rapid growth of agricultural productivity, it also produces crops which are highly reliance on large amounts of an ever costly or more expensive, and inefficient fertilizers and pesticides. In the meantime, subsistence agriculture, on which the majority of the people depend, is pushed into marginal or less productive land, and this, in turn, leads to deforestation and soil degradation.

III. Conclusion

Overall, the above discussions have shown that the present-day large-scale environmental crisis which is mainly manifested in climate change; ocean acidification; stratospheric ozone destruction and depletion; deforestation; lack of global freshwater use; air pollution; soil degradation; and biodiversity loss is increasingly connected with modernity in such a fundamental and strong manner that it cannot be studied in isolation from it; it has been discussed that modernity with its specific attributes is held responsible for the present worldwide environmental crisis. That is, its capitalistic or industrial character as well as the complex, highly administered technological system of modern society has resulted in large scale environmental crisis.

References

- Berry, B. J. (1990). Urbanization. In B. L. Turner II, W. C. Clark, R. W. Kates, J. F. Richards, J. T. Mathews, & W. B. Meyer (Eds.), *The Earth as Transformed by Human Action: Global and Regional Changes in the Biosphere over the Past 300 Years* (pp. 103-119). Cambridge, New York: Cambridge University Press.
- Clark, B., & York, R. (2008). Rifts and Shifts: Getting to the Root of Environmental Crises. *Monthly Review*, 60 (06).
- Current World Population*. (2018, June 21). Retrieved from Worldometers: <http://www.worldometers.info/world-population/>
- Foster, J. B. (1999). *The Vulnerable Planet: a Short Economic History of the Environment*. New York: Monthly Review Press.
- UN. (1999). *The World at Six Billion*. United Nations, Department of Economic and Social affairs. New York: Population division. Retrieved from <http://www.un.org/esa/population/publications/sixbillion/sixbilpart1.pdf>
- _____. (2007). *World Population Prospects: The 2006 Revision*. United Nations, Department of Economic and Social Affairs. New York: United Nations. Retrieved from http://www.un.org/esa/population/publications/wpp2006/WPP2006_Highlights_rev.pdf